PERFORMANCE EVALUATION OF MUTUAL FUND INDUSTRY DURING COVID SCENARIO: AN INSIGHT INTO INDIAN EQUITY MUTUAL FUND CHEMES

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Abstract

The Mutual Funds are playing a vital role in the development of capital markets, financial intermediation and the growth of corporate sector. Thus, investors can indirectly participate in the capital market by subscribing to the units of mutual funds. Mutual funds employ professional fund managers to manage the investment activities. Therefore, investors also get benefit of professional expertise of these managers.

Since Dec, 2019 the world has seen unprecedented times because of COVID-19 pandemic which has put almost all economies of the World to a standstill. Indian Mutual Fund Industry is also not saved from the ill effects of the Pandemic. Through this study an attempt has been made to study the impact of COVID-19 over the returns of Mutual Fund Large Cap equity Schemes.

For the purpose of study the NAV of the selected Mutual Fund schemes was taken and returns were calculated. The period of study included the COVID and non-COVID period to know the impact of the recessionary condition over the Mutual Fund schemes. The returns of mutual funds were also compared with the benchmark returns. Correlation between the benchmark and the return was also studied and **t test** was applied to test the existence of relationship of returns between the benchmark indices and the Mutual fund Equity Schemes. It was found after applying the tools that Mutual Fund Equity schemes performed better than benchmark indices during the non COVID period, but with the occurrence of the Pandemic, the Stock market came out as a better resort than the Mutual Fund Equity Schemes.

Keywords: Equity Mutual funds, COVID-19, return, risk, Correlation, AUM

1.Introduction to Mutual Fund

In today's era of uncertainties, complexities and competition, investment has become an indispensable part of everyone's life. It has been understood that making a right investment is far more crucial than mere saving the money. A right investment is the one that provides a sense of security to its investor apart from just being safe and secure. At the same time, it must also provide the right rate of return and reduce the risk involved in it.

From the beginning of 90s, like many tools to access the benefits of financial markets, mutual funds have witnessed huge growth in the Assets under Management by them. A mutual fund is a type of financial vehicle made up of a pool of money collected from many investors to invest in securities like stocks, bonds, money market instruments, and other assets. Mutual funds are operated by professional money managers, who allocate the fund's assets and attempt to produce capital gains or income for the fund's investors. Thus, a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus. Mutual funds give small or individual investors access to professionally managed portfolios of equities, bonds, and other securities. A share of a mutual fund represents investments in many different stocks (or other securities) instead of just one holding. The average mutual fund holds hundreds of different securities, which means mutual fund shareholders gain important diversification at a low price. .

1.1 Performance and Risk Measurement of Mutual Funds

Mutual **F**und Industry today, with about 45 players and more than eighteen hundred schemes, is one of the most preferred investment avenues in India. However, with a plethora of schemes to choose from, the retail investor faces problems in selecting funds. Factors such as investment strategy and management style are qualitative, but the funds record is an important indicator too. Though past performance alone cannot be indicative of future performance, it is, however, the only quantitative way to judge how good a fund is at present. Therefore, there is a need to correctly assess the past performance of different mutual funds. Also, there must be some kind of performance indicators that will reflect the quality of stock selection of various AMCs.

Return alone should not be considered as the basis of measurement of the performance of a mutual fund scheme, it should also include the risk taken by the fund manager because different funds will have different levels of risk attached to them. Risk associated with a fund, in a general, can be defined as variability or fluctuations in the returns generated by it. The higher the fluctuations in the returns of a fund during a given period, higher will be the risk associated with it. .

The **Total Risk** of a given fund is sum of these two and is measured in terms of **standard deviation** of returns of the fund. By using the risk return relationship, the competitive strength of the mutual funds vis-à-vis one another can be assessed in a better way.

1.2 Equity Mutual Fund

After explaining various informatory parts of Mutual Fund, this section is related to Equity Mutual fund. The objective of this current research is also connected specifically to Equity Mutual Fund.

An investor has various objectives prior investing in MF based on which various categories have been defined. Equity/Growth schemes under investment objective are those which aim to achieve capital appreciation by investing in stocks. Such schemes focus on those companies that are experiencing significant earnings or revenue growth. These companies generally plough back most of their profits in research and development rather than pay dividends. Such Schemes invest majority of funds in equities (shares). They promise attractive return on investments and are exposed to high risks depending upon the equity market situations, which are influenced by external factors like economic, social and political aspects of the economy. Equity/Growth funds aim to generate capital gains rather than focus on generating income.

1.3 COVID-19

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. It was first identified in December 2019 in Wuhan, China, and has since spread globally, resulting in an ongoing pandemic. The first case may be traced back to 17 November 2019. As of 1 June 2020, more than 6.2 million cases have been reported across 188 countries and territories, resulting in more than 372,000 deaths. More than 2.66 million people have recovered. The outbreak has been declared an epidemic in more than a dozen states and union territories, where provisions of the Epidemic Diseases Act, 1897 have been invoked, and educational institutions and many commercial establishments have been shut down. India has suspended all tourist visas, as a majority of the confirmed cases were linked to other countries. COVID-19 has disrupted the investor ecosystem and the unpredictability about the period of time the industry will require to get back to normal makes the situation although more vulnerable.

1.4 Covid-19 and Indian Mutual Fund Industry

The market sentiment in the stock markets across the world is gloomy. This is reflected in the frequent crashes in the share markets in all parts of the world. Financial markets in India are witnessing sharp volatility currently as a result of the fallout in global markets. The fall is in line with the global benchmark indices as the domestic market usually tracks the major global indices and the high volatility is likely to continue in the near future.

Further, with overseas investors (FPIs) flying to the safety of dollar-backed assets from emerging markets has led to a sharp downfall in the Indian Stock Market. Pre COVID-19, market capitalization on each major exchange in India was about $2.16 trillion. The 2019 stock market rally was limited to 8-10 stocks within the large caps. The Sensex returned around 14% (excluding dividends) for the year 2019 but prominently featured blue-chip companies, without which Sensex returns would have been negative. However, in the start of 2020, there was overall recovery which led to both NSE and BSE traded at their highest levels ever, hitting peaks of 12,362 and 42,273 respectively.

The Research has taken into consideration the period between January 30 to March 15 as COVID-19 low-intensity phase and from March 16 to April 15 as COVID-19 high-intensity phase and compares the performance of the Mutual Fund industry. Although the new COVID-19 cases keep snowballing, it is worthwhile to notice that the growth rate of COVID-19 confirmed cases shows a steady path particularly after April 5(Prof Badri Narayana Ratha,IIT Hyderabad). It clearly demonstrates that the lockdown decision taken by both Central and State Governments has so far controlled this pandemic as compared to many western countries, the statement added. The COVID-19-induced nationwide lockdown has created a 'havoc' for both mutual fund investors and the industry. Mutual fund returns have taken a sharp hit due to the Coronavirus epidemic. But history has shown that markets and mutual fund returns have always come back stronger. With this in mind, we bring to you a list of curated mutual funds that have withstood such turbulent times and are expected to bounce back stronger and faster once we have fought this epidemic.

Two important developments globally - the spread of the COVID–19 virus and the meltdown in oil prices - have affected market sentiment and contributed to the high volatility and decline in the global equity markets, including India.

Mutual funds have been hit due to multiple reasons. Firstly, the debt funds are likely to be hit by increasing cases of corporate defaults as the cash flow position gets tighter. In addition, the institutional investors in debt funds are likely to exit the funds in panic and add to the volatility for the fund manager. In the case of equity funds, the correction in the market is just adding to the troubles of the segment and most of the NAVs have gone deep into the negative territory.

A bearish market like this, in fact, is a great opportunity to invest, as you can buy more units at lower NAVs through your SIPs. Along with the SIPs, investors who can also invest lumpsum in equity mutual funds in a staggered manner. This will help you create a bigger corpus and reach your financial goals quicker".

2 Literature Review

Narayanaswami and Rathnamani (2013) analysed the performance of the selected Equity Mutual Fund schemes in terms of risk- return relationship. The financial parameters used in the study were alpha, beta, standard deviation, r-square and Sharpe ratio. From the performance analysis of the selected five equity large cap funds, it was found that all the funds have performed well during the study period. The fall in the CNX NIFTY during the year 2011 have impacted the performance of all the selected funds. It was concluded that all the funds have performed well in the high volatile market movement expect Reliance Vision.

Tarini and Gautam (2013) studied the performance evaluation of balanced mutual funds scheme with the help of the risk adjusted performance measure. In the study the risk and return have been analyzed by calculating average return, standard deviation and beta. The data for study was monthly closing NAV recorded in the period starting from 1st April 2011 to 31st March 2012. The study disclosed that the private sector has performed better as compared to the Public sector in case of average return, standard deviation and beta. Whereas the risk-adjusted performance measures had shown poor performance of the sample schemes and the public sector was preferred in this regard.

Palani and Mohamed (2013) did a comparative analysis of Public and Private sector mutual fund schemes. For the purpose of study, documents and the annual reports of the various mutual fund were extracted from the websites. NAVs of the schemes and returns on portfolio performance were analyzed with the help of tools It was found that the performance of private mutual funds in India had been very encouraging. Because of this, some of the foreign companies such as Morgan Stanley are showing interest to promote the Mutual Funds in India. The performance of private mutual funds can be judged on the basis of funds mobilized over the years number of schemes promoted, NAV of these units and the profits earned over the years.

Annapoorna and Gupta (2013) aimed to evaluate the performance of Mutual Fund schemes ranked 1 by CRISIL and compared these returns with SBI domestic term deposit rates. Considering the interest of retail investors simple statistical techniques like averages and rate of returns were used. The results obtained from the study clearly depicted that, in most of the cases the mutual fund schemes have failed even to provide the return of SBI domestic term deposits.

Rao and Rani (2013) have attempted to study the performance of selected balanced schemes of mutual funds based on risk-return relationship models and various measures. To undertake the study a total of 10 schemes offered by various mutual funds have been studied over the time period of 3 years i.e. April, 2010 to March, 2013. The analysis has been made with the help of the techniques such as mean return, beta risk, total risk, Sharpe ratio, Treynor ratio, Jensen Alpha and Fama's decomposition measure. In the overall analysis, it was found that JM Balanced-G (-0.0282) and Kotak Balanced fund (-0.6974) schemes managers have poor stock selection skills.

3 Research Methodology

3.1 Objective of the Study

1. To study the impact of COVID 19 over the performance of Indian Mutual Fund Industry.
2. To compare performance of Mutual Fund schemes in pre COVID and COVID period.
3. To find out the best performers and the worst performers during entire period of study.
4. To compare the mutual fund performance with the benchmark indices during Pre COVID and COVID Scenario.

3.2 Data and its source

NAV of the larger cap equity schemes of 32 Mutual Fund Houses have been taken from AMFI.NSE Nifty 50 and S&P BSE total have been taken as benchmark indices.

3.3 Period of study

Period of study is 1^{st} November 2019 to 31^{st} May 2020 in which after 15^{th} January 2020 is taken as the period under the Pandemic effect. First case in India (Delhi) happened on 2nd March 2020 and WHO announced COVID as pandemic on 12th March 2020. Since the outbreak was seen much before in other areas of the world and the effect on Indian market started coming after mid of March. Therefore COVID period in the study is taken the period after 15^{th} January 2020.

3.4 Tools applied:

A. Measurement of Return

The following equations would be used to work out return on daily basis.

Return is calculated as follows:

$$R_p = (NAV_t - NAV_{t-1}) / NAV_{t-1}$$

For Scheme ,return is calculated with the help of NAV whereas for Market return , and NSE values are used for the purpose of calculating market return.

B. Measurement of Risk

Total risk would be measured with the help of standard deviation of daily returns both for the mutual fund schemes and the benchmark. Mathematically, the following formulae are used to compute mutual funds risk and the market risk:

Mutual fund risk is calculated as follows:

$$\sigma_p = \sqrt{\sum(R_p - \bar{R}_p)^2 / n-1}$$

Where, σ_p = standard deviation of daily return of a schemes, $\bar{R}_p$ is daily return of the scheme, n is number of observations.

C. Correlation

Correlation is calculated between scheme's return and benchmark returns.

T-Test: Test has been applied to test the hypothesis. Ho taken is 'there is no relationship between Equity Mutual fund and stock market returns'

5. Data Analysis and Discussions

5.1 Increase in number of schemes and Asset Under Management

Assets under management (AUM) is the total market value of the investments that a person or entity manages on behalf of clients. Overall, AUM is only one aspect used in evaluating a company or investment. It is also usually considered in conjunction with management performance and management experience. However, generally, investors can consider higher investment inflows and higher AUM comparisons as a positive indicator of quality and management experience. Increased investor flows, capital appreciation, and reinvested dividends will increase the AUM of a fund.

Table 1 exhibits the change in Asset Under Management according to category of Mutual Fund schemes and also the change in the number of schemes from October 2010 to 30th April 2020.

Table 1: Change in Asset Under Management from 31st October 2019 to 30th April 2020

Sr. No.	Scheme Name	No. of Schemes as on April 30, 2020	Average Net Assets Under Management for the month April 2020	No. of Schemes as on October 2019	Average Net Assets Under Management for the month October 2019	% Change in AUM
A	**Open ended Schemes**					
I	Income/Debt Oriented Schemes	329	1,105,587.94	318	1,170,811.34	-5.57%
II	Growth/Equity Oriented Schemes	321	611,487.18	322	725,107.12	-15.67%
III	Hybrid Schemes	134	273,430.22	129	351,921.22	-22.30%
IV	Solution Oriented Schemes	33	16,170.84	30	17,059.02	-5.21%
V	Other Schemes	150	172,603.40	143	165,663.59	4.19%
	Total A-Open ended Schemes	967	2,179,279.59	942	2,430,562.30	-10.34%
B	**Close Ended Schemes**					
I	Income/Debt Oriented Schemes	769	147,687.76	817	148,838.88	-0.77%
II	Growth/Equity Oriented Schemes	109	25,498.57	121	32,579.65	-21.73%
	Total B -Close ended Schemes	878	173,186.33	938	181,418.53	-4.54%
C	**Interval Schemes**	23	412.31	24	1,685.56	-75.54%
	Grand Total	1868	2,352,878.23	1904	2,613,666.39	-9.98%
	Fund of Funds Scheme (Domestic) **	46	12,987.48	43	8,433.32	54.00%

In the table 1, It is observed that there an overall reduction in AUM from October 2019 to 30th April 2020 due to the Bearish trend prevailing in the Economy due to COVID-19. It can also be observed that reduction in Close ended scheme (-4.54%) is less than the reduction in Open Ended Schemes (-10.34%). It also depicts that reduction In AUM of Equity Schemes (-15.67%) is more than reduction in Debt Schemes (-5.57). As far as the number of schemes are concerned the total number of schemes reduced from 1904 to 1868 during the study period.

5.2 Return

Mutual Funds are considered the safest investment option amongst other options available in Financial Market. Therefore, to analyze the annual return is also very imperative, so that the investors can get help to decide their preferences. Table 2.1 presents the fortnight wise return of the Large Cap Equity Mutual Fund schemes. 32 Mutual Fund houses having large cap Equity schemes have been selected for the purpose of the current study. The Percentage change in NAV for the purpose of calculation of return has been calculated with base taken as NAV on 15th November 2019**.** The period till 15th January 2020 is taken as Pre COVID Period and period after that was the time when the global effect of COVID started showing in India also. Period after that is the period affected by COVID-19. Daily opening & closing NAV of different schemes have been used to calculate the returns from the fund schemes. BSE Sensex has been used for market portfolio.

Table 2.1: Mutual Fund Returns Pre COVID-19 and at the time of Covid-19

Scheme Name	Return Before COVID	Return During COVID	Overall Return
Aditya Birla Sun Life Frontline Equity	1.667%	-15.050%	-9.906%
Axis Bluechip Fund	1.115%	-8.869%	-5.797%
Baroda Large Cap	1.324%	-12.163%	-8.013%
BNP Paribas Large Cap Fund	1.295%	-10.978%	-7.202%
Canara Robeco Bluechip Equity Fund	1.741%	-8.424%	-5.296%
DSP Top 100 Equity	2.212%	-15.756%	-10.227%
Edelweiss Large Cap Fund	1.207%	-13.073%	-8.679%
Essel Large Cap Equity Fund	1.621%	-14.737%	-9.704%
Franklin India Bluechip	**3.000%**	-13.242%	-8.245%
HDFC Top 100 Fund	1.582%	-18.492%	-12.315%
HSBC Large Cap Equity Fund	1.649%	-14.081%	-9.241%
ICICI Prudential Bluechip Fund	2.157%	-14.322%	-9.252%
IDBI India Top 100 Equity	1.205%	-12.187%	-8.066%
IDFC Large Cap Fund	1.335%	-11.559%	-7.591%
Indiabulls Bluechip	1.634%	-15.570%	-10.276%
Invesco India Largecap Fund	1.684%	-11.542%	-7.473%
JM Large Cap Fund	0.919%	-5.887%	-3.793%
Kotak Bluechip Fund	2.378%	-13.474%	-8.597%
LIC MF Large Cap Fund	1.768%	-11.153%	-7.177%
L&T India Large Cap	1.465%	-13.585%	-8.954%
Mahindra Pragati Bluechip Yojana	NA	8.750%	8.750%
Mirae Asset Large Cap Fund	2.276%	-14.601%	-9.408%

Nippon India Large Cap Fund	**2.484%**	-17.327%	-11.231%
PGIM India Large Cap Fund	1.412%	-14.583%	-9.661%
SBI Bluechip	0.859%	-15.243%	-10.289%
Tata Large Cap Fund	1.185%	-16.270%	-10.899%
Taurus Largecap Equity Fund	1.158%	-14.573%	-9.733%
Union Largecap Fund	1.658%	-14.038%	-9.209%
UTI Mastershare	**2.414%**	-11.537%	-7.245%
S&P BSE Sensex Total Return Index(Change)	**0.927%**	**-2.468%**	**-1.423%**
NIFTY 50 Total Return Index(Change)	**0.930%**	**-2.440%**	**-1.403%**

Inter scheme Comparison

From the above table, it can be seen that before COVID-19 period Franklin India Bluechip (3%), Nippon India Large Cap Fund (2.48%) and UTI Mastershare (2.41%) were the top performers whereas SBI Bluechip (0.859%), JM Large Cap Fund (0.919%) and Taurus Largecap Equity Fund (1.158%) were the worst performers.

During COVID period, Axis Bluecip Fund(-8.869%) and JM Large Cap Fund (5.887%)have less hit hard as the negative return given by them is in single digit as compared to others who have given double digit negative returns. On an overall basis, Axis Bluechip Fund and BNP Paribas Large Cap Fund have performed well than the other Mutual Fund House schemes.

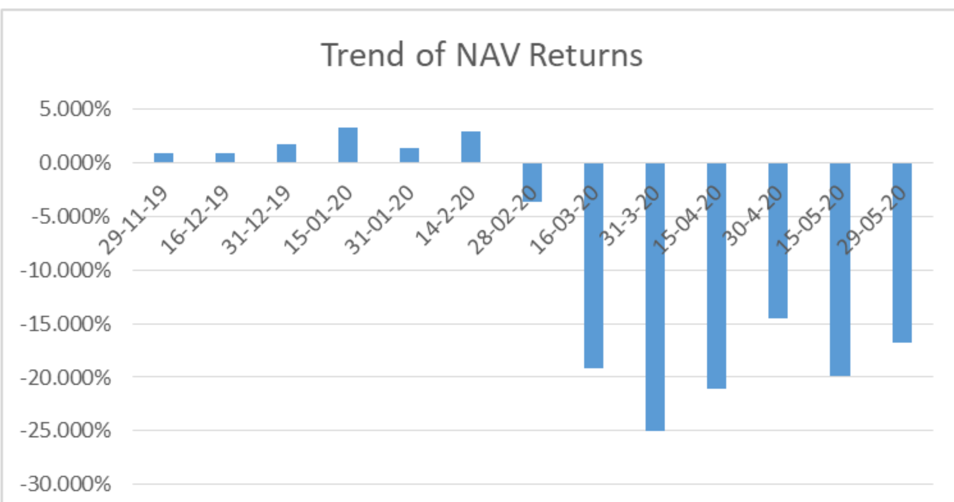
On comparison with the stock market indices returns it can be drawn that in the Pre COVID period all the schemes except SBI Bluechip Scheme and JM Morgan Large Cap Fund were performing better than the stock market .But when the economy got hit by COVID stock market came out to be performing better than the Mutual Fund schemes producing less negative returns.

5.3 Date wise comparison of returns: For the purpose of the date wise analysis of NAV returns in the below section 13 dates have been taken during the duration of study. The average return of the 32 schemes is calculated for the purpose of comparison. Period till 15th January as taken as Non COVID-19 period and period after 15th January is taken as COVID period. The impact of different events is studied in this section through table 2.1 and has been supported by Graph.

Table 2.1: Analysis of Returns (Date wise Comparison)
(In Percentage)

Date	**29-11-19**	**16-12-19**	**31-12-19**	**15-01-20**	**31-01-20**	**14-2-20**	**28-02-20**	**16-03-20**	**31-3-20**	**15-04-20**	**30-4-20**	**15-05-20**	**29-05-20**
Average Return (32 schemes)	90	0.80	1.65	3.26	1.36	2.92	-3.71	-19.13	-24.97	-21.03	-14.56	-19.93	-16.77

Table 2.1 and its supporting graph below depicts that till 15th January there is an increasing trend, after that the returns started falling. The return after that till 31st Jan kept falling. On 31st January WHO announced the outbreak as National Health Emergency. But since there was no case in India, The Indian Mutual Fund market went upward till 14th Feb 2020.After that the global effect started coming as the US Market crashed, the Mutual Fund Market was also not saved from the impact and a fall in the Mutual fund return is observed on 28th February 2020 (-3.71).But the worst was about to come. WHO announced COVID as pandemic on 12th March and First case in India (Delhi) happened on 2nd March 2020. On 13th March, President of the US Donald Trump declared COVID-19 as National Emergency, Sensex declined over 3500 points, Nifty went below 900, no improvement in the global market was seen as the uncertainty prevailed over the economic impact of virus. Coronavirus panic selling was observed during this period and selling by FIIs was also seen. A nearly 50 percent fall in crude oil prices was observed which hinted towards global recession. The faceoff between Russia and Saudi led to current crude oil price reduction. In India the trading was halt that day. The circuit breakers had to be triggered on that day. This overall scenario also hit the Indian Mutual Fund Industry hard during that period. Therefore a steep fall in the return is observed on 16th March 2020(-19.13% decline) and further on 31st March 2020(-24.97) as the first lockdown in India was announced on 23rd March. It can be seen from above table and graph that a correction is seen in the month of April 2020 in Mutual Fund Equity schemes. The reasons for correction were that the low valuations made market attractive and there was a hope of economic activity resuming. Selling by FII also slowed in April 2020 supported the market sentiments, business resumed in the areas which were less effected by COVID-19. Comfort was taken from the various packages announced by Central Bank in India. But the effects were short lived, in the mid of May the stock market started declining and the change is also observed in the Mutual Fund Equity market as the investors dumped their shares to book profits and the risk and uncertainty related to COVID-19 still prevailed.



5.4 Risk

Return alone should not be considered as the basis of measurement of the performance of a mutual fund scheme, it should also include the risk taken by the fund manager because different funds will have different levels of risk attached to them. Risk associated with a fund, in a general, can be defined as variability or fluctuations in the returns generated by it. The higher the fluctuations in the returns of a fund during a given period, higher will be the risk associated In finance, standard deviation is a common metric associated with risk. Standard deviation provides a measure of the volatility of a value in comparison to its historical average. A high standard deviation indicates a lot of value volatility and therefore a high degree of risk. It is measured in terms of Standard Deviation of daily returns in case of various sample schemes of Equity Mutual funds. For the purpose of analysis the average daily risk has been annualized. In The preceding section Table 3 presents the risk of the selected Public sector equity Mutual Fund schemes and Private sector Equity Mutual Fund schemes. Ranking of the average risk is done to compare the Mutual Fund schemes as per their risk associated.

SD=√ N(X2) – (X)2

Table 3: Standard Deviation (Risk) of Mutual Fund Schemes during COVID and Non COVID Period

Scheme Name	Standard Deviation(Before Covid)	Standard Deviation(During Covid)	Standard Deviation(Overall)
Aditya Birla Sun Life Frontline Equity	0.801%	6.495%	6.445%
Axis Bluechip Fund	0.490%	4.938%	4.905%
Baroda Large Cap	0.648%	5.628%	5.590%
BNP Paribas Large Cap Fund	0.990%	5.830%	5.813%
Canara Robeco Bluechip Equity Fund	0.709%	5.701%	5.695%
DSP Top 100 Equity	0.893%	7.062%	7.013%
Edelweiss Large Cap Fund	0.935%	6.274%	6.234%
Essel Large Cap Equity Fund	0.767%	6.904%	6.859%
Franklin India Bluechip	1.713%	6.349%	6.365%
HDFC Top 100 Fund	1.120%	6.778%	6.709%
HSBC Large Cap Equity Fund	0.696%	6.278%	6.238%
ICICI Prudential Bluechip Fund	0.655%	6.473%	6.444%
IDBI India Top 100 Equity	0.479%	5.873%	5.830%
IDFC Large Cap Fund	0.699%	5.986%	5.957%
Indiabulls Bluechip	0.185%	6.319%	6.252%
Invesco India Largecap Fund	0.491%	6.674%	6.644%
JM Large Cap Fund	0.262%	3.029%	3.014%
Kotak Bluechip Fund	0.545%	6.378%	6.350%
LIC MF Large Cap Fund	0.579%	5.474%	5.449%
L&T India Large Cap	0.716%	6.396%	6.354%
Mahindra Pragati Bluechip Yojana	NA	4.061%	5.239%
Mirae Asset Large Cap Fund	0.765%	6.530%	6.490%
Nippon India Large Cap Fund	1.044%	6.921%	6.869%
PGIM India Large Cap Fund	0.587%	6.256%	6.205%
SBI Bluechip	0.660%	6.467%	6.408%
Tata Large Cap Fund	0.517%	6.504%	6.424%

Taurus Largecap Equity Fund	0.332%	6.069%	6.010%
Union Largecap Fund	0.505%	6.548%	6.504%
UTI Mastershare	0.692%	6.236%	6.228%

It can be observed for the above table that highest risk possessing Mutual Fund schemes are Franklin India Bluechip (1.713%), HDFC Top 100 Fund (1.102%) and Nippon India Large Cap Fund (1.044%) and the least risky schemes are Taurus Largecap Equity Fund (.332%), IDBI India Top 100 Equity (.479%) and Axis Bluechip Fund (.490%). It can also be seen that dusing the period effected by COVID, The scehems possessing high risk came out to be DSP Top 100 Equity (7.062%), Nippon India Large Cap Fund (6.921%) and Essel Large Cap Equity Fund (6.904%) and schemes possessing least risks are JM Large Cap Fund (3.029%), Axis Bluechip Fund (4.938%) and LIC MF Large Cap Fund (5.474%).On an overall basis, the least risk is possessed by by JM Large Cap Fund (3.014%),Axis Bluechip Fund (4.905%) and LIC MF Large Cap Fund (5.449%).

5.5 Correlation between Stock Market Returns and Mutual Fund Schemes Returns and t test

Correlation is a statistical technique to find out the relationship or connection between two or more things. In the below section I have attempted to find out the correlation between selected Equity Large Cap Mutual Fund schemes and the stock market indices.

The Mutual Fund schemes having the highest AUMs and the least AUMs have been selected from Public Sector as well as Private sector Mutual Fund categories. The indices selected for the purpose of doing the comparison are the NSE Nifty 50 total and BSE total value. The comparative relationship between the stock market and Mutual Fund performance during COVID and Non COVID period have been found out. Correlation and t test are conducted to study the relationship.

For the purpose of testing the results of the study t test has been applied. Null hypothesis have been formulated for the purpose of testing.

Null Hypothesis (Ho) = There is no relationship between stock market returns and the mutual fund scheme returns.

5.5 A Mutual Fund Schemes with High AUMs

Table 4: Returns of Public Sector Mutual fund and indices

Date/Scheme NAME	SBI Bluechip	UTI Mastershare	BSE	NSE
29-11-19	0.238%	1.043%	1.08%	1.35%
16-12-19	-0.015%	1.286%	1.44%	1.33%
31-12-19	0.850%	2.545%	2.22%	2.29%
15-01-20	2.364%	4.784%	3.76%	3.76%
31-01-20	1.079%	2.925%	1.38%	0.56%

14-2-20	1.016%	4.970%	2.23%	1.83%
28-02-20	-5.957%	-2.178%	-5.10%	-5.83%
16-03-20	-21.435%	-17.626%	-22.22%	-22.68%
31-3-20	-27.824%	-23.808%	-26.98%	-27.72%
15-04-20	-24.210%	-20.198%	-24.72%	-24.97%
30-4-20	-17.638%	-13.480%	-16.45%	-17.11%
15-05-20	-23.078%	-18.983%	-22.94%	-23.19%
29-05-20	-19.143%	-15.459%	-19.66%	-19.46%

The above table shows the returns of the high AUM possessing Equity Mutual Fund Schemes and the indices during different dates in the COVID and Non COVID Period.

Table 5: Correlation between Public Sector Mutual Fund and Stock Market indices t-test p value

	SBI Bluechip	**UTI Mastershare**
Correlation with BSE	0.9988	0.9964
t test p value	0.1800	0.0003
Ho	**Accepted**	**Rejected**
Correlation with NSE	0.9987	0.9953
t test p value	0.243135107	0.02%
Ho	**Accepted**	**Rejected**

TABLE 5 shows that high correlation is found between SBI Bluechip with BSE and NSE both. By applying t test it is found that in case of UTI, relationship is seen with NSE and BSE indices.

Table 6 Returns of Private Sector Mutual fund and indices

Date/ Scheme Name	**ICICI Prudential Bluechip Fund**	**Aditya Birla Sun Life Frontline Equity**	**HDFC Top 100 Fund**	**Axis Bluechip Fund**	**BSE**	**NSE**
29-11-19	1.220%	1.284%	1.698%	0.032%	1.08%	1.35%
16-12-19	1.081%	0.668%	0.471%	0.380%	1.44%	1.33%
31-12-19	2.370%	1.664%	1.437%	1.392%	2.22%	2.29%
15-01-20	3.958%	3.053%	2.723%	2.657%	3.76%	3.76%
31-01-20	1.173%	0.926%	-1.380%	1.993%	1.38%	0.56%

14-2-20	2.025%	1.594%	-1.667%	5.726%	2.23%	1.83%
28-02-20	-5.361%	-4.966%	-9.264%	0.221%	-5.10%	-5.83%
16-03-20	-21.537%	-21.065%	-26.143%	-12.085%	-22.22%	-22.68%
31-3-20	-26.852%	-27.913%	-30.083%	-17.748%	-26.98%	-27.72%
15-04-20	-22.918%	-23.790%	-27.142%	-16.387%	-24.72%	-24.97%
30-4-20	-16.636%	-17.802%	-20.734%	-10.851%	-16.45%	-17.11%
15-05-20	-21.445%	-22.934%	-26.624%	-16.387%	-22.94%	-23.19%
29-05-20	-17.349%	-19.497%	-23.390%	-14.299%	-19.66%	-19.46%

Table 6 shows the comparison of returns between Private sector Mutual Fund Schemes having highest AUMS with the stock indices.

Table 7: Correlation between Private Sector Mutual Fund and Stock Market indices t-test p value

	ICICI Prudential Bluechip Fund	**Aditya Birla Sun Life Frontline Equity**	**HDFC Top 100 Fund**	**Axis Bluechip Fund**
Correlation with BSE	0.9984	0.9984	0.9951	0.980411465
t test p value	0.0972	0.3043	0.0001	0.00560734
Ho	**Accepted**	**Accepted**	**Rejected**	**Rejected**
Correlation with NSE	0.9992	0.9985	0.996497889	0.976484063
t test p value	0.0063	0.7038	0.0001	0.004650238
Ho	**Rejected**	**Accepted**	**Rejected**	**Rejected**

Table 7 shows the correlation between Private sector Mutual funds and NSE and BSE. It is observed that highest correlation is found ICICI Prudential and BSE and NSE. By applying the t test it is found that in case of BSE, relationship is found between HDFC Top 100 fund and AXIS Bluechip fund. In case of NSE, a relationship is found with ICICI Prudential fund, HDFC Top 100 Fund and AXIS Bluechip Fund.

5.5 B Mutual Fund Schemes with LOW AUMs

Table 8: Returns of public sector mutual fund Schemes and Indices

Scheme Name/ Date	**Baroda Large Cap**	**LIC MF Large Cap Fund**	**IDBI India Top 100 Equity**	**BSE**	**NSE**
29-11-19	0.728%	0.162%	0.353%	1.08%	1.35%

16-12-19	0.529%	0.955%	0.627%	1.44%	1.33%
31-12-19	1.191%	2.075%	1.176%	2.22%	2.29%
15-01-20	2.846%	3.880%	2.666%	3.76%	3.76%
31-01-20	1.390%	2.630%	1.137%	1.38%	0.56%
14-2-20	3.375%	5.852%	3.097%	2.23%	1.83%
28-02-20	-3.772%	-0.295%	-3.332%	-5.10%	-5.83%
16-03-20	-18.398%	-14.137%	-18.189%	-22.22%	-22.68%
31-3-20	-22.700%	-21.365%	-23.285%	-26.98%	-27.72%
15-04-20	-19.391%	-20.378%	-20.267%	-24.72%	-24.97%
30-4-20	-14.295%	-14.794%	-13.681%	-16.45%	-17.11%
15-05-20	-19.391%	-20.030%	-19.091%	-22.94%	-23.19%
29-05-20	-16.281%	-17.860%	-16.072%	-19.66%	-19.46%

Table 8 shows the comparison of Private sector Mutual fund returns with the stock Indices BSE and NSE. The Mutual Fund schemes having least AUM are selected here.

Table 9: Correlation between Public Sector Mutual fund Schemes and Indices and P Value

	Baroda Large Cap	**LIC MF Large Cap Fund**	**IDBI India Top 100 Equity**
Correlation with BSE	0.9979	0.9826	0.9982
t test p value	0.0188	0.0057	0.0210
Ho	**Rejected**	**Rejected**	**Rejected**
Correlation with NSE	0.9971	0.9792	0.9973
t test p value	0.0108	0.0047	0.0122
Ho	**Rejected**	**Rejected**	**Rejected**

In **table 9**, the correlation between returns of selected Public sector Mutual Fund schemes and stock market indices. It can be seen that Incase of BSE, Highest correlation is found with IDBI India Top 100 Equity. In case of NSE, highest correlation is seen with IDBI India Top 100 Equity.

By applying t test it is found that all the Public sector Mutual Fund Equity schemes are having relationship in terms of their returns with NSE and BSE.

Table 10: Returns of Private sector mutual fund Schemes and Indices

Scheme Name/ Date	Taurus Largecap Equity Fund	Essel Large Cap Equity Fund	Indiabulls Bluechip	BSE	NSE
29-11-19	0.327%	0.914%	0.766%	1.08%	1.35%
16-12-19	0.576%	0.498%	1.398%	1.44%	1.33%
31-12-19	1.322%	1.696%	1.758%	2.22%	2.29%
15-01-20	2.408%	3.375%	2.615%	3.76%	3.76%
31-01-20	0.327%	1.781%	0.000%	1.38%	0.56%
14-2-20	1.610%	3.003%	1.758%	2.23%	1.83%
28-02-20	-5.300%	-4.066%	-4.644%	-5.10%	-5.83%
16-03-20	-20.285%	-21.532%	-20.875%	-22.22%	-22.68%
31-3-20	-25.939%	-28.299%	-27.006%	-26.98%	-27.72%
15-04-20	-23.780%	-24.650%	-25.293%	-24.72%	-24.97%
30-4-20	-16.791%	-17.430%	-18.305%	-16.45%	-17.11%
15-05-20	-21.856%	-22.428%	-23.805%	-22.94%	-23.19%
29-05-20	-19.147%	-19.015%	-21.957%	-19.66%	-19.46%

Table 10 shows the comparative returns of Private sector Mutual fund returns and the returns of BSE and NSE during COVID and NON COVID periods.

Table 11: Correlation between Public Sector Mutual fund Schemes and Indices and P VALUE

	Taurus Largecap Equity Fund	Essel Large Cap Equity Fund	Indiabulls Bluechip
Correlation with BSE	0.9993	0.9981	0.9970
t test p value	0.8800	0.9435	0.0479
Ho	**Accepted**	**Accepted**	**Rejected**
Correlation with NSE	0.9990	0.9976	0.9961
t test p value	0.4464	0.2607	0.3622
Ho	**Accepted**	**Accepted**	**Accepted**

It can be clearly observed from the above table that in case of both BSE, and NSE highest correlation is found with Tauras Largecap Equity fund.

By applying t test it is deduced that in case of BSE, there is a relation of returns between BSE and India Bulls Bluechip only and in case of NSE, P values shows that it has no relationship of returns with any of the Equity Schemes included in the study above. Hence the Null Hypothesis is accepted.

6 Conclusion

In the study it is concluded that since a small investor is not able to have a diversified portfolio mainly due to paucity of resources. However, a mutual fund pools together the savings of such small investors and invests the same in the capital market and passes the benefits to the investors. During the period before COVID, It is drawn from the study that Mutual fund Equity Schemes have given better returns than the stock Market. But during COVID it is found that Stock Market is a better resort than Mutual Fund schemes since they have produced better returns than the Mutual Fund Equity schemes. The prevailing risk and uncertainty has taken toll over the investment optimism in Equity Mutual Funds. A decline in the number of Equity Schemes have been observed during this period. AUM of equity schemes has declined substantially. It is also drawn from the study that Mutual Fund Equity schemes have been performing well during Non COVID-19 period but after pandemic came over, the scheme returns had fallen substantially. The Mutual Fund market also hopes that it will regain its momentum once the cloud of COVID 19 disappears.

References:

Narayanaswamy R and Rathnamani V (2013), “Performance Evaluation of Equity Mutual Funds (On Selected Equity Large Cap Funds)”, International Journal of Business and Management Invention, ISSN (Online): 2319 – 8028, ISSN (Print): 2319 – 801X www.ijbmi.org Volume 2 Issue 4 ‖ April. 2013‖ PP.18-24.

Tarini and Gautam Jayant (2014), “An Analysis of Performance of Mutual Funds: Public Sector Vs Private Sector”, ssrn.com (ID 2482002).

Palani S and Mohamed P Chilar (2013), “Public and Private sector mutual fund in India”, Tactful Management Research Journal, Vol. 2, Issue. 3, Dec 2013, PP: 1-5 ISSN: 2319-7943.

Annapoorna M. S. and Gupta P. K. (2013), “A Comparative Analysis of Returns of Mutual Fund Schemes Ranked 1 by CRISIL”, Tactful Management Research Journal, Vol. 2, Issue. 1, Oct 2013, pp: 1-6, ISSN: 2319-7943.

Rao K. Mallikarjuna and Rani H. Ranjeeta (2013), “Risk adjusted performance evaluation of selected balanced Mutual Fund Schemes in India”, www.scholarsworld.net, Volume.1, Issue.2, July 2013, pp: 133-142.

Websites:

www.outlookmoney.com , www.moneycontrol.com , www.nseindia.com , www.bseindia.com; www.investopedia.org ,www.economictimes.com ,www.financialexpress.com

